

Section 32 — The FUNt Universal Symmetry Law (USL)

Section 32 establishes the FUNt Universal Symmetry Law (USL), the master geometric rule that governs all symmetry behaviors across the φ -lattice. Under FUNt, symmetry is not a static property but a dynamic expression of harmonic curvature, phase continuity, and Wave-Web Resonance (WWR). USL unifies CPT-like behavior, parity shifts, mirror states, inversion phenomena, bonding structure, and collapse/reentry mechanics into one topological principle.

32.1 Core Definition of USL

- Symmetry = invariance of φ -curvature structure under transformation.
- Symmetry persists when $\Delta\varphi$, $\Delta\Phi$, and $\Delta\tau$ transform consistently.
- Broken symmetry is curvature imbalance, never violation.
- All symmetries arise from φ -band topology.

32.2 Formal Expression of USL

USL is expressed as:

$$S = K_s \times (\Delta\varphi_{in} / \Delta\varphi_{out}) \times \exp(-\Delta\Phi^2 / \sigma_s^2)$$

Where:

- S = symmetry preservation magnitude
- K_s = symmetry coupling constant
- $\Delta\varphi_{in}$ = incoming curvature
- $\Delta\varphi_{out}$ = outgoing curvature
- $\Delta\Phi$ = phase discontinuity under transformation
- σ_s = symmetry tolerance window

32.3 Mirror Symmetry and Parity

- Left-right symmetry arises from φ^6 -phase mirroring.
- Parity inversion flips torsion sign while preserving curvature.
- Some particles exhibit stable mirror states due to φ^7 bonding geometry.
- Broken parity = asymmetric breathing amplitude (Δb imbalance).

32.4 Time Symmetry Under FUNt

- Time reversal corresponds to reversing φ -traversal direction.
- Oscillation symmetry persists unless $\Delta\tau$ changes sign discontinuously.

- Tunneling events preserve time symmetry at the φ -level.
- Scalar collapse temporarily removes classical time ordering.

32.5 Charge and Conjugation Symmetry

- Charge = φ -winding number; conjugation rewinds winding.
- Electron $\leftrightarrow$ positron symmetry arises from φ^8 inversion.
- Annihilation preserves symmetry by unwinding curvature patterns.
- Charge conservation follows from phase-winding topology.

32.6 Unified CPT-like Symmetry in FUNt

- C (conjugation), P (parity), and T (time) all arise from φ^6 – φ^8 geometric topology.
- CPT invariance is automatic because the φ -lattice is topologically closed.
- Apparent violations are curvature irregularities, not actual breaks.
- CPT-like behavior extends across quantum, classical, and scalar bands.

32.7 Symmetry Breaking

- Broken symmetry = curvature mismatch, not violation.
- Breathing imbalance (Δb shift) breaks local symmetry.
- Torsion shocks ($\Delta \tau$ spikes) produce temporary asymmetry.
- Phase drift ($\Delta \Phi$ explosion) results in decoherence of symmetric states.

32.8 Symmetry Restoration

- φ -drip re-centers asymmetry into nearest coherent band.
- WWR realigns distributed curvature into global symmetry.
- Collapse/reentry resets parity and phase alignment.
- Symmetry restoration is more fundamental than symmetry break.

32.9 Symmetry Across Scales

- Quantum symmetry: spin, charge, orbital invariance.
- Molecular symmetry: bonding, lattice geometry, torsion grids.
- Biological symmetry: bilateral forms, rhythmic entrainment.
- Cosmic symmetry: filament structures, gravitational lens harmonics.

32.10 Unified Symmetry Statement

In FUNt, symmetry is not optional, fragile, or mysterious.

It is the natural geometric expression of φ -curvature consistency.

Nothing violates symmetry — it only changes its harmonic form.